

Amendments to the Claims

Please amend Claims 1-10. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Currently amended) A method for controlling the transfer of ~~a fluid substance, and/or a substance comprised in a fluid substance~~ one or more liquid or solid substances[[,]] from a first cavity to a second cavity, comprising the steps of:
 - a) introducing into the first cavity ~~a fluid substance~~ said one or more liquid or solid substances whose transfer is to be controlled[[,]] ~~and/or a substance whose transfer is to be controlled comprised in the fluid substance,~~ and holding the fluid substance ~~and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances in the first cavity, wherein the first cavity is connected to the second cavity by an intermediate cavity, and the intermediate cavity is provided with a separation medium comprising a gas or liquid material which prevents transfer of ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances into the intermediate cavity;
and
 - b) replacing the separation medium in the intermediate cavity with a connection medium comprising a liquid material by introducing said connection medium into the intermediate cavity, wherein ~~that~~ said connection medium allows transfer of ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances into the intermediate cavity; and wherein said one or more liquid or solid substances are transferred from the first cavity to the second cavity via the intermediate cavity, thereby controlling transfer of one or more liquid or solid substances
 - c) ~~transferring the fluid substance and/or the substance comprised in the fluid substance from the first cavity to the second cavity via the intermediate cavity.~~

2. (Currently amended) The method of claim 1, wherein one of the following steps (1) to (3) is ~~also~~ carried out in the first and/or second cavity:
 - (1) ~~separating the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances by applying a driving force selected from the group consisting of voltage, centrifugal force, capillarity, magnetic force, electroosmotic flow and mechanical pumping;
 - (2) ~~reacting the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances; and
 - (3) ~~detecting the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances.
3. (Currently amended) The method of claim 2 1, wherein the one or more liquid or solid substances are separated ~~separation is carried out~~ by electrophoresis in the first and/or second cavities.
4. (Currently amended) The method of claim 1, wherein the first cavity, the second cavity, and the intermediate cavity comprise a groove or tube configuration; ~~the fluid substance is a liquid;~~ the separation medium is a gas air; and the connection medium is a liquid an electroconductive liquid solution, wherein said connection medium is introduced into the intermediate cavity by capillarity.
5. (Currently amended) The method of claim ~~[[4]]~~ 1, wherein ~~the second cavity comprises the form of at least one groove or tube that branches from the first cavity~~ said one or more substances whose transfer is to be controlled are liquid; the separation medium is a liquid material immiscible to said one or more liquid substances whose transfer is to be controlled; and said separation medium is introduced into the intermediate cavity by micropump or electroosmotic flow.

6. (Currently amended) A device for controlling the transfer of ~~a fluid substance and/or a substance comprised in a fluid substance~~ one or more liquid or solid substances, comprising:
- a) a first cavity for holding ~~the fluid substance~~ said one or more liquid or solid substances;
 - b) a second cavity for ~~holding the fluid substance~~ receiving said one or more liquid or solid substances; and
 - c) an intermediate cavity for connecting the first cavity and the second cavity, for holding a separation medium comprising a gas or liquid material which prevents transfer of ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances from the first cavity[[:]], and for holding a connection medium comprising a liquid which allows transfer of said one or more liquid or solid substances into the intermediate cavity,
wherein the separation medium ~~can be~~ is replaced with a connection medium in the intermediate cavity, and the introduction of the connection medium to the intermediate cavity enables transfer of ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances retained in the first cavity[[:]] to the intermediate cavity and the second cavity.
7. (Currently amended) The device of claim 6, wherein the first cavity and/or the second cavity comprises at least one of the following mechanisms (1) to (3):
- (1) a mechanism for separating ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances by applying a driving force selected from the group consisting of voltage, centrifugal force, capillarity, magnetic force, electroosmotic flow and mechanical pumping;
 - (2) a mechanism for reacting ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances; and
 - (3) a mechanism for detecting ~~the fluid substance and/or the substance comprised in the fluid substance~~ said one or more liquid or solid substances.

8. (Currently amended) A two-dimensional electrophoretic device comprising;
 - a) a first cavity for holding ~~an~~ a first electrophoretic medium;
 - b) a second cavity for holding ~~an~~ a second electrophoretic medium; and
 - c) an intermediate cavity for connecting the first cavity and the second cavity, for holding a separation medium comprising a gas or liquid material which prevents transfer of ~~the substance~~ one or more proteins to be electrophoresed from the first electrophoretic medium to the second electrophoretic medium[[:]], and for holding a connection medium comprising a liquid material which allows transfer of said one or more proteins via the intermediate cavity,

wherein the separation medium ~~can be~~ is replaced with a the connection medium, and the introduction of the connection medium into the intermediate cavity enables transfer of ~~the substance~~ said one or more proteins to be electrophoresed in the electrophoretic medium retained in the first cavity, to the intermediate cavity and the second cavity.

9. (Currently amended) The two-dimensional electrophoretic device of claim 8, wherein the ~~second cavity comprises the form of at least one groove or tube that branches from the first cavity~~ connection medium is introduced into the intermediate cavity via capillary action.

10. (Currently amended) A method for conducting two-dimensional electrophoresis, comprising the steps of:
 - a) introducing one or more proteins to be electrophoresed into the first cavity of the electrophoretic device of claim 8;
 - b) conducting electrophoresis in the first cavity of the electrophoretic device of claim 8;
 - b) c) replacing a separation medium comprising air by introducing a liquid connection medium which allows transfer of said one or more proteins to be electrophoresed into the second cavity via to an the intermediate cavity of the electrophoretic device of claim 8 after step a); and

e) d) conducting electrophoresis of ~~a substance~~ said one or more proteins to be electrophoresed in a the second cavity of the electrophoretic device of claim 8.